

CLAIM AMENDMENTS

1. (Currently Amended) A method of document transformation comprising:
 - a) modeling a source XML document corresponding to a source schema as a source tree having a plurality of source nodes;
 - b) modeling a target XML document corresponding to a target schema as a target tree having a plurality of target nodes; and
 - c) generating a sequence of transformation operations that transforms said source tree to said target tree based at least in part on data loss costs associated with the transformation operations, said sequence of transformation operations utilizing an extensible stylesheet language for transformations (XSLT) generator to translate the sequence of transformation operations into an equivalent XSLT transformation script and utilize the transformation script to transform an input XML document corresponding to the source schema to the target XML document corresponding to the target schema.
2. (Cancelled)
3. (Original) The method of document transformation as described in Claim 1, wherein c) comprises:

matching said plurality of source nodes to said plurality of target nodes.
4. (Original) The method of document transformation as described in Claim 1, wherein c) comprises:

automatically generating said sequence of transformation operations.

5. (Previously Presented) The method of document transformation as described in Claim 1, further comprising:

d) for each source node in said source schema, selecting a plurality of candidate nodes in said target schema that are possible matches;

e) for each source node in said source schema, generating a plurality of node transformation sequences for transforming to each of said plurality of candidate nodes; and

f) for each source node in said source schema, selecting one of said plurality of node transformation sequences, a selected node transformation sequence, for said sequence of transformation operations that is associated with a least cost of data loss.

6. (Previously Presented) The method of document transformation as described in Claim 5, wherein f) further comprises:

in a match between a source node and a target node, selecting said selected node transformation sequence to achieve a match, where a first cost of data loss for said match is less than a second cost of data loss when deleting information contained in said source node, in a first iteration of matching.

7. (Previously Presented) A method of document transformation as described in Claim 6, further comprising:

matching said source node to said target node having a synonymous label to achieve said match.

8. (Original) The method of document transformation as described in Claim 5, wherein f) further comprises:

in a match between a source node and a target node, selecting said selected node transformation sequence when an associated cost of data loss is less than a second cost of data loss when deleting source information contained in said source node and adding target information in said target node, in a second iteration of matching.

9. (Original) The method of document transformation as described in Claim 5, wherein f) further comprises:

selecting said selected node transformation sequence having the least associated cost of data loss.

10. (Currently Amended) A method of document transformation comprising:

a) modeling a source schema of XML and a target schema of XML as a tree structure creating a source tree and a target tree, said source tree having a plurality of source nodes, said target tree having a plurality of target nodes; and

b) generating a sequence of transformation operations that transforms said source XML document to said target XML document based at least in part on data loss costs associated with the transformation operations, wherein said plurality of source nodes of said source schema are matched and transformed to said plurality of target nodes in said target schema, said sequence of transformation operations utilizing an extensible stylesheet language for transformations (XSLT) generator to translate the sequence of transformation operations into an equivalent XSLT transformation script and utilize the transformation script to transform an input XML document corresponding to the source schema to the target XML document corresponding to the target schema.

11. (Previously Presented) The method of document transformation as described in Claim 10, wherein b) comprises:

b1) for each source node in said source tree, selecting a plurality of candidate nodes in said target tree that are possible matches;

b2) for each source node in said source tree, generating a plurality of node transformation operations transforming to each of said plurality of candidate nodes; and

b3) for each source node in said source tree, selecting one of said plurality of node transformation operations forming a selected node transformation operation having the least cost of data loss.

12. (Original) The method of document transformation as described in Claim 11, further comprising:

combining said selected node transformation operation for each of said source nodes matched to a target node into a sequence of transformation operations that transforms said source schema to said target schema.

13. (Original) The method of document transformation as described in Claim 10, wherein said source schema is a source document type definition (DTD) and said target schema is a target DTD.

14. (Original) The method of document transformation as described in Claim 10, further comprising:

folding nodes in said source and target trees in a preprocessing phase to find one-to-one node matching.

15. (Original) The method of document transformation as described in Claim 10, further comprising:

merging nodes in said source and target trees in a preprocessing phase to find one-to-one node matching.

16. (Original) The method of document transformation as described in Claim 10, further comprising:

performing transformation operations only once at a node in said source tree and said target tree with the following exceptions:

- a) a relabel operation following an unfold operation;
- b) said unfold operation following said relabel operation;
- c) said relabel operation performed between an attribute and an element following or followed by a deletion or an addition of a qmark quantifier node.

17. (Original) The method of document transformation as described in Claim 11, further comprising:

converting said sequence of transformations operations into an Extensible Stylesheet Language for Transformations (XSLT) script.

18. (Currently Amended) A computer system comprising:
a processor; and
a computer readable memory coupled to said processor and containing program instructions that, when executed, implement a method of document transformation comprising:

a) modeling a source XML document corresponding to a source schema as a source tree having a plurality of source nodes;

b) modeling a target XML document corresponding to a target schema as a target tree having a plurality of target nodes; and

c) generating a sequence of transformation operations that transforms said source tree to said target tree based at least in part on data loss costs associated with the transformation operations, said sequence of transformation operations utilizing an extensible stylesheet language for transformations (XSLT) generator to translate the sequence of transformation operations into an equivalent XSLT transformation script and utilize the transformation script to transform an input XML document corresponding to the source schema to the target XML document corresponding to the target schema.

19. (Cancelled)

20. (Original) The computer system as described in Claim 18, wherein c) in said method comprises:

matching said plurality of source nodes to said plurality of target nodes.

21. (Original) The computer system as described in Claim 18, wherein c) in said method comprises:

automatically generating said sequence of transformation operations.

22. (Previously Presented) The computer system as described in Claim 18, wherein said method further comprises:

d) for each source node in said source schema, selecting a plurality of candidate nodes in said target schema that are possible matches;

e) for each source node in said source schema, generating a plurality of node transformation sequences for transforming to each of said plurality of candidate nodes; and

f) for each source node in said source schema, selecting one of said plurality of node transformation sequences, a selected node transformation sequence, for said sequence of transformation operations that is associated with a least cost of data loss.

23. (Previously Presented) The computer system as described in Claim 22, wherein f) in said method further comprises:

in a match between a source node and a target node, selecting said selected node transformation sequence to achieve a match, where an associated cost of data loss for said match is less than a second cost of data loss when deleting information contained in said source node, in a first iteration of matching.

24. (Previously Presented) A computer system as described in Claim 23, wherein said method further comprises:

matching said source node to said target node having a synonymous label to achieve said high quality match.

25. (Original) The computer system as described in Claim 22, wherein f) in said method further comprises:
in a match between a source node and a target node, selecting said selected node transformation sequence when an associated cost of data loss is less than a second cost of data loss when deleting source information contained in said source node and adding target information in said target node, in a second iteration of matching.

26. (Original) The computer system as described in Claim 22, wherein f) in said method further comprises:

selecting said selected node transformation sequence having the least associated cost of data loss.